



Pleustidae*

JEAN JUST

Zoological Museum, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark.

(jean-just@snm.ku.dk)

* *In*: Lowry, J.K. & Myers, A.A. (Eds) (2009) Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef, Australia. *Zootaxa*, 2260, 1–930.

Abstract

The austropleustine *Tepidopleustes acromatius* **sp. nov.** (Pleustidae) is described from the outer Great Barrier Reef off Lizard Island. The species is similar to two tropical species from Madagascar, Mauritius and Hawaii, but differs in several characters from two species previously reported from Australia.

Key words: Crustacea, Amphipoda, Pleustidae, Austropleustinae, Great Barrier Reef, Australia, taxonomy, new species, *Tepidopleustes acromatius*

Introduction

A single species of Pleustidae: Austropleustinae, *Tepidopleustes acromatius* **sp. nov.**, was found near Lizard Island. Species of *Tepidopleustes* (type species *T. barnardi* (Ledoyer, 1972); Madagascar and Mauritius) fall into two distinct groups. One group comprises *T. barnardi*, *T. honomu* (Barnard, 1970; Hawaii) and *T. acromatius* **sp. nov.** (below), and an as yet undescribed species from the Gulf of Thailand (personal observation). This group is characterised by a posteriorly serrate epimeron 3 and a tapering, entire telson; the group is widespread in the Indo-Pacific tropics, and indeed appears to be the only truly tropical component of the large family Pleustidae. The second group comprises two recently described species from subtropical waters off northern New South Wales, Australia, *T. juliana* (Lowry & Springthorpe, 2005) and *T. coffsiana* Hughes & Lowry, 2006. These two species lack serration on epimeron 3, and the tapering telson is narrowly cleft a quarter to one third its length. *Tepidopleustes coffsiana* further differs from other species of *Tepidopleustes* by having a labium with distinct inner lobes and closely set large outer lobes as opposed to widely spaced, small outer lobes with no or vestigial inner lobes.

Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2005). Material was hand-collected on scuba and is lodged in the Australian Museum, Sydney (AM). A set of colour plates, a list of standard abbreviations and detailed station data is available in Lowry & Myers (2009). A CD (*Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef: Interactive Keys*) is available with the book or the keys can be accessed at the crustacea.net website.

Pleustidae Buchholtz, 1874

Austropleustinae Bousfield & Hendrycks, 1994

Tepidopleustes Karaman & Barnard, 1979

Tepidopleustes Karaman & Barnard, 1979: 113. —Barnard & Karaman, 1991: 653 (diagnosis).

Tepidopleustes acromatius sp. nov.

(Figs 1, 2)

Type material. Holotype, male, 3.9 mm (tip of rostrum to insertion of telson), AM P71533, Yonge Reef, Half Mile Opening (14°34'19"S 145°36'51"E), *Halimeda opuntia* (green coralline algae), 10 m, I. Takeuchi, R.T. Springthorpe & O. Coleman, 5 March 2005 (QLD 1823). Paratypes: 2 unsexed (poor), AM P71494 (QLD 1819); 1 ovigerous female, 3 fully developed females, 2 males, 6 juveniles, AM P77856 (QLD 1823); 2 juveniles (poor), AM P71559 (QLD 1823); 1 male, 1 juvenile, AM P71478 (QLD 1823).

Type Locality. Half Mile Opening, Yonge Reef, Queensland, Australia (14°34'19"S 145°36'51"E).

Etymology. The epithet is composed of the Greek ακρο (akro) meaning extreme and μάτι (mati) meaning eye, in allusion to the very large eyes of this species.

Description. Based on holotype, male, 3.9 mm, AM P71533 and paratype, male, AM P77856.

Head. *Rostrum* about 0.3 x length of antenna 1 peduncle article 1; lateral head lobe bluntly pointed, right angled to slightly acute; eyes large, inflated, occupying nearly entire lateral face of head. *Antenna 1* with tiny accessory flagellum of single article with single simple seta apically; peduncle articles 1 and 2 with several robust setae distally; flagellum article 1 elongate, about as long as succeeding 3 articles combined. *Antenna 2* peduncle articles 3–5 with several robust setae distally; flagellum proximal articles shorter than wide, gradually decreasing in width and increasing in length to approximately 4 times width. *Labrum* asymmetrical, with deep notch. *Mandible* lacinia mobilis present on both sides; molar low, rounded, non-tritulative; accessory setal row reduced, with 3 short setae; palp article 3 with ventral row of plumose setae in distal third, 2 strong, serrate apical setae and 2 adjoining slender setae. *Maxilliped* palp article 3 apex rounded, without terminal dactylus.

Pereon. *Pereonite 6* with small, flat dorsoposterior projection; *pereonite 7* with dorsal carina and larger posterior projection. *Coxae 1–4* each shorter than corresponding pereonite, gradually increasing in length from 1 to 4; *coxa 4* with weakly serrate ventral margin. *Gnathopod 1* slender, slightly larger than 2; propodus simple, 0.8 length of carpus; merus, carpus and propodus with long, finely dentate setae along posterior margin. *Gnathopod 2* slender, similar to 1 in shape and setation, propodus simple. *Pereopods 5–7* successively longer; basis posterodistally broadly rounded, posterior margin finely serrate.

Pleon. *Pleonites 1 and 2* each with dorsal carina and dorsoposterior projection, strong lateral apodemic ridge with rounded posterior projection; epimeron 2 with acutely pointed posteroventral corner. *Pleonite 3* with low dorsal carina, weak apodemic ridge, posterior margin of epimeron rounded, multiserrate. *Uropod 1* outer ramus 0.6 x length of inner ramus. *Uropod 2* outer ramus slightly more than 0.5 x length of inner ramus. *Uropod 3* outer ramus approximately 0.7 x length of inner ramus. *Telson* entire, apex broadly rounded, ventrally thickened midlength but not distinctly keel-shaped, with 2 robust setae in midline.

Habitat. Among *Halimeda opuntia* algae, 10 m.

Remarks. *Tepidopleustes acromatius* sp. nov. is clearly distinguished from the only two Australian congeners, *T. coffsiana* and *T. juliana*, on account of its serrate third epimeron and its broadly rounded entire telson. *Tepidopleustes acromatius* differs from *T. barnardi* and *T. honomu*, the two species with serrate epimeron 3, by the enormous, bulbous eyes that cover almost the entire lateral surfaces of the head. The outer ramus of uropod 3 of *T. acromatius* is 2/3 the length of inner ramus, as in *T. honomu*, but 9/10 in *T. barnardi*.

The lateral cephalic lobe in *T. acromatius* is acute, as in *T. barnardi*, but rounded quadrate in *T. honomu*. *Tepidopleustes barnardi* has the propodus of gnathopods 1 and 2 subchelate; in *T. acromatius* and the other three species the propodus is simple.

Distribution. *Australia.* Queensland: Yonge Reef, Great Barrier Reef.

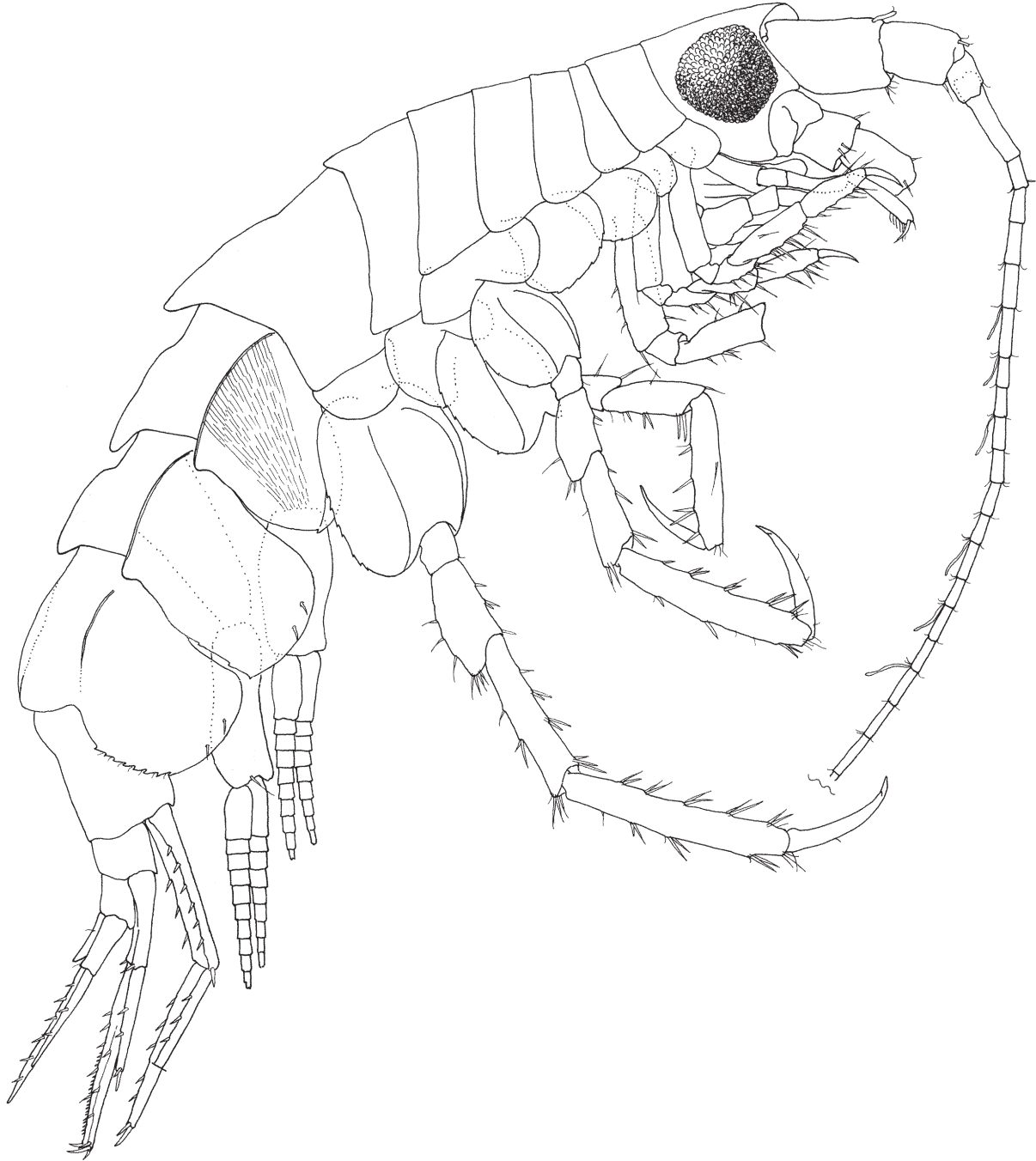


FIGURE 1. *Tepidopleustes acromatius* **sp. nov.**, holotype, male, 3.9 mm, AM P71533, Yonge Reef, Great Barrier Reef.

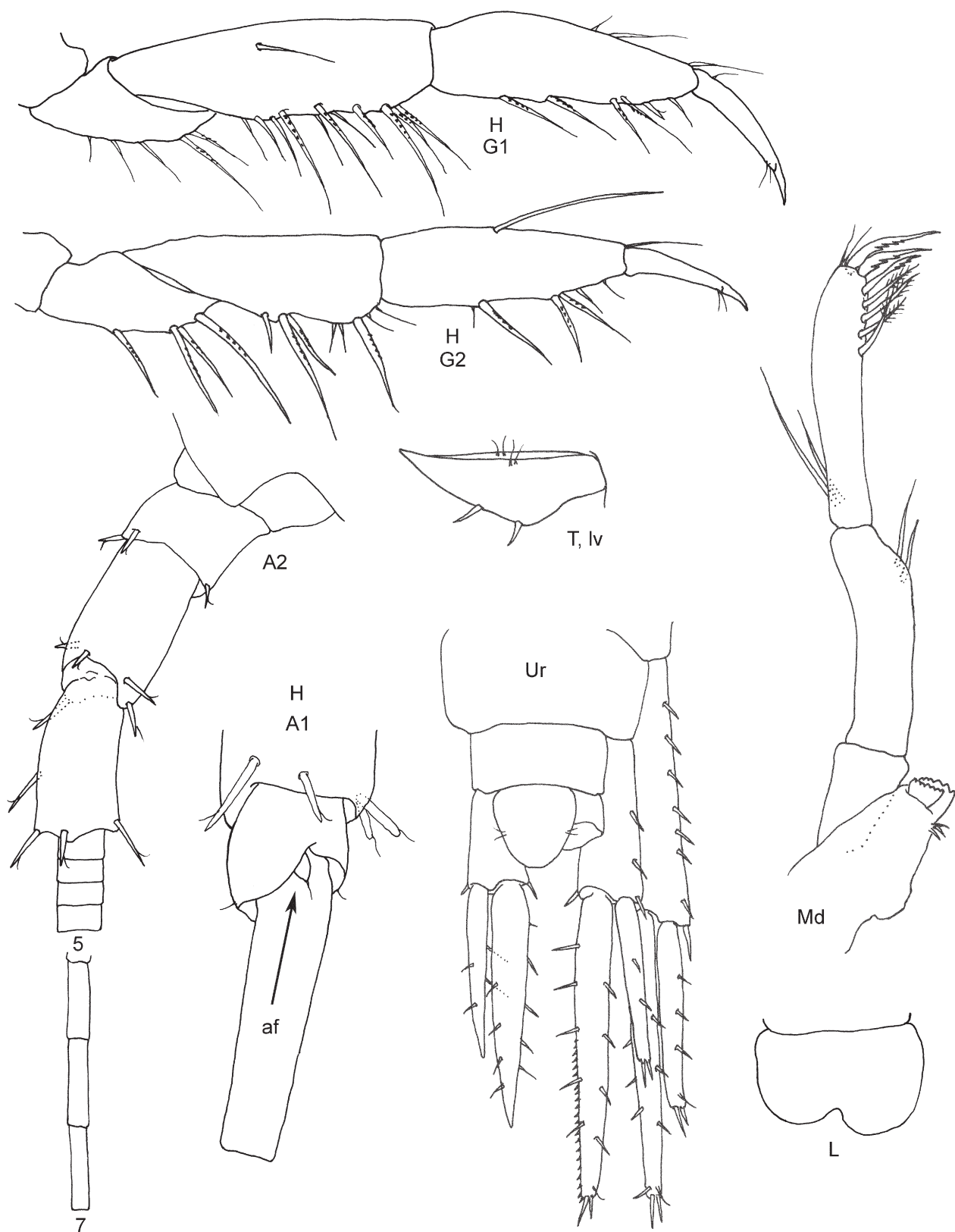


FIGURE 2. *Tepidopleustes acromatius* **sp. nov.**, H, holotype, male, 3.9 mm, AM P71533, Yonge Reef, Great Barrier Reef. All other details, paratype, male, AM P77856.

Acknowledgments

Many thanks to my workshop colleagues for their efforts in the *Halimeda* beds!

References

- Barnard, J.L. (1970) Sublittoral Gammaridea (Amphipoda) of the Hawaiian Islands. *Smithsonian Contributions to Zoology*, 34, 1–286.
- Barnard, J.L. & Karaman, G.S. (1991) The families and genera of marine gammaridean Amphipoda (except marine gammaroids). *Records of the Australian Museum, Supplement* 13, 1–866.
- Bousfield, E.L. & Hendrycks, E.A. (1994) A revision of the family Pleustidae (Crustacea: Amphipoda: Leucothoidea) Part 1. Systematics and biogeography of component subfamilies. *Amphipacifica*, 1(1), 17–57.
- Buchholz, R. (1874) Crustaceen. Die Zweite Deutsche Nordpolarfahrt in den Jahren 1869 und 1870, unter Führung des Kapitan Koldewey. *Wissenschaftliche Ergebnisse II, Zoologie*, 8, 262–398, pls 1–15.
- Dallwitz, M.J. (2005) Overview of the DELTA System. <http://delta-intkey.com>. Last accessed (8/9/2007).
- Hughes, L.E. & Lowry, J.K. (2006) New species of Amphipoda (Crustacea: Peracarida) from the Solitary Islands, New South Wales, Australia. *Zootaxa*, 1222, 1–52.
- Karaman, G.S. & Barnard, J.L. (1979) Classificatory revisions in gammaridean Amphipoda (Crustacea), part 1. *Proceedings of the Biological Society of Washington*, 92, 106–165.
- Ledoyer, M. (1972) Amphipodes gammariens vivant dans les alvéoles des constructions organogènes récifales intertidales de la région de Tuléar (Madagascar). *Tethys Supplement* 3, 165–286.
- Lowry, J.K. & Myers, A.A. (2009) Foreword. In: Lowry, J.K. & Myers, A.A. (Eds), Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef, Australia. *Zootaxa*, 2260, 17–108.
- Lowry, J.K. & Springthorpe, R. (2005) New calliopiid and eusirid amphipods from eastern Australian waters (Crustacea: Amphipoda: Calliopiidae: Eusiridae). *Proceedings of the Biological Society of Washington*, 118(1), 38–47.